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Pesticide Fact Sheet Number 212: Liquid Nitrogen

(U.S.) Environmental Protection Agency, Washington, DC

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15. Supplementary Notes

16. Abstract (Limit: 200 words)

This document contains up-to-date chemical information, including a summary of the Agency's regulatory position and rationale, on a specific pesticide or group of pesticides. A Fact Sheet is issued after one of the the following actions has occurred.

1. Issuance or reissuance of a registration standard,
2. Issuance of each special review document,
3. Registration of a significantly changed use pattern,
4. Registration of a new chemical, or
5. An immediate need for information to resolve controversial issues relating to a specific chemical or use pattern.

17. Document Analysis a. Descriptors

Pesticides, regulations, Chemical Information Fact Sheet, Use Patterns, science findings.

b. Identifiers/Open-Ended Terms

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United States Environmental Protection Agency

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EPA

Pesticide Fact Sheet

Name of Chemical: LIQUID NITROGEN

Reason for Issuance: Unconditional Registration of a New Chemical

Date Issued: July 1987

Fact Sheet Number: 212

1. Description of Chemical:

Generic Name: Nitrogen, liquified under pressure
Common Name: Liquid or Liquified Nitrogen
Trade Name: Liquid Nitrogen; Nitrogen Liquified, under pressure, LIN.
EPA Shaughnessy Code: 128962
Chemical Abstract Service (CAS) No. 7727-37-9
Year of initial registration: July 1987
Type of Pesticide: Termiticide (for drywood termites only)
Chemical Family: Inert Gas
U.S. Producer: Blizzard Systems Inc.
208 South Gaudalupe Ave.
Redondo Beach, CA 90277

2. Use Patterns and Formulations:

Application sites: Space within the walls of buildings.

Type of formulation: compressed gas, cryogenic liquid.

Method of Application: Special equipment is used to inject the Liquid Nitrogen into the space within the walls of buildings.

Application Rate: Application rates vary according to the size of the infestation. Apply Liquid Nitrogen through pre-drilled holes in the wall in the infested area until the temperature reaches -20°F. This temperature must be maintained for at least five minutes.

3. Science-Findings:

Adequate information is available to access the toxicological and environmental hazards of this product for use as a drywood termiticide.

Chemical Characteristic's:

Physical state: compressed gas, cryogenic liquid
Odor: odorless
Color: colorless
Boiling point: -195.8°C or -320.5°F
Specific gravity: 0.97 at 70°
Solubility: limited solubility in water
Miscibility: miscible with other gases
Empirical Formula: N_2

Toxicology Data Requirements:

Acute oral toxicity --Waived
Acute dermal toxicy --Waived
Acute dermal -Waived
Primary eye irritation - Waived
Primary dermal irritation - Waived

Environmental Data Requirements:

Fish & Wildlife - Waived
Environmental Fate - Waived

Tolerance Assessment:

There are no tolerances currently established for this chemical. The use as a termiticide is a non-food use and does not require a tolerance.

4. Summary of Regulatory Position and Required Unique Labeling:

The use of this product as a termiticide to control drywood termites is restricted to use only by certified applicators or persons under their direct supervision. The restriction is due to the highly corrosive nature of liquid nitrogen on contact with skin and eyes.

Based on the extremely corrosive nature of this product special precautionary labeling regarding appropriate protective clothing is required:

"Corrosive, causes eye and skin damage on contact. Do not get in eyes, on sin or on clothing. Wear goggles or faceshield and protective clothing suitable for use with cryogenic liquids. Chemical goggles, face shields and loose fitting gloves of impervious material should be used during handling or transfer operation or whenever the possibility of exposure to Liquid Nitrogen spills exist."

5. Summary of Data Gaps:

All data to support the registration of this chemical was waived. The data requirements for chronic, subacute and acute toxicity, and wildlife and aquatic organisms were waived on the rationale that approximately 70% of the earth's atmosphere is composed of nitrogen. The human body is in constant contact with nitrogen in the atmosphere. The toxic effects of liquid nitrogen are well known and readily available. The likelihood of direct human exposure is remote, since the product is injected into the space within the walls of buildings using specialized equipment. Since the product is intended for use indoors, the likelihood of direct contact with environmentally sensitive areas containing fish, birds, and wildlife is remote.

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6. Contact Persons at EPA

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DISCLAIMER

The information presented in this Chemical Information Fact Sheet is for informational purposes only and may not be used to fill data requirements for pesticide registration and reregistration.